PC-1248
PC-1246S

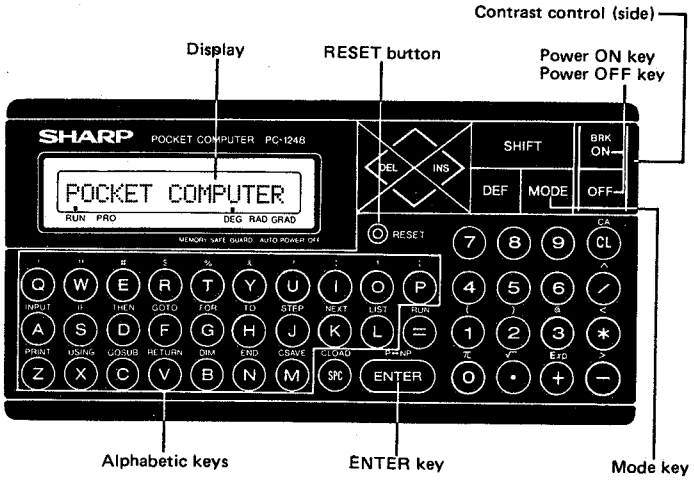
SHARP SERVICE MANUAL

CODE : 00ZPC1246SSME

V02651

MODEL PC-1248 PC-1246S

1. KEYBOARD LAYOUT



2. SPECIFICATIONS

Model: PC-1246S/PC-1248 Pocket Computer

Processor: 4 bit CMOS CPU

Programming Language: BASIC

Memory Capacity:
System ROM: About 17.4K Bytes
RAM
System About 500 Bytes
User
Fixed Memory Area 208 Bytes
(A ~ Z, A$ ~ Z$)
Program/Data Area
1278 Bytes (PC-1246S),
7422 Bytes (PC-1248)

Stack:
Sub-routine: 10 stacks
FOR–NEXT: 5 stacks
Function: 16 stacks
Data: 8 stacks

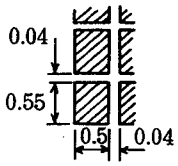
Operators: Addition, subtraction, multiplication, division, exponentiation, trigonometric and inverse trigonometric functions, logarithmic and exponential functions, angle conversion, square root, sign, absolute, integer, relational operators, logical operators.

Numeric Precision: 10 digits (mantissa) + 2 digits (exponent).

Editing Features: Cursor left and right, line up and down, character insert, character delete.

Memory Protection: CMOS Battery backup.

Display: 16 character liquid crystal display with 5 5 x 7 dot characters.



Keys: 54 keys: Alphbetic, numeric, special symbols, and functions. Numeric pad. User defined keys.

Power Supply: 6.0V DC Lithium cells.
Type: CR-2032

Power Consumption: 6.0V DC @ 0.05W
Cells are sufficient for approximately 120 hours of continuous operation in normal circumstances.
(Based on 10 minutes of operation or program execution and 50 minutes of display per hour at a temperature of 20°C)

- The operation time varies slightly depending on usage and the type of battery used.

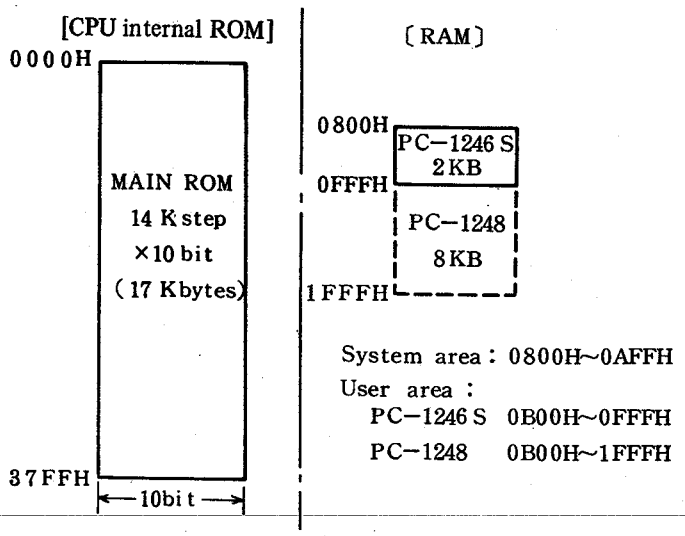
Operating Temperature: 0°C ~ 40°C (32°F ~ 104°F).

Dimensions: 135(W) x 70(D) x 11(H)mm.
5-5/16"(W) x 2-3/4"(D) x 7/16"(H)

Weight: Approximately 85g (0.19 lb) (with cells)

Accessories: Hard cover, two lithium cells (built-in), and operation manual

3. MEMORY MAP



System area : 0800H~0AFFH
User area :
PC-1246S 0B00H~0FFFH
PC-1248 0B00H~1FFFH

4. CPU (SC61720D15)

A 100-pin, 4-bit, microprocessor used in this model has a 17KB ROM and display chip within the chip.

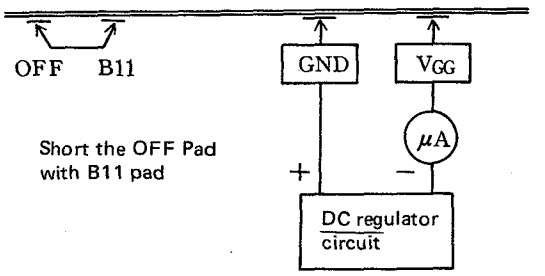
- CPU signal description

Pin No.	Signal name	In/Out	Function standby = power off
1	V1	In	LCD driving power
2	V2	In	LCD driving power
3	V3	In	LCD driving Power
4	V4	In	LCD driving Power
5	V5	Out	RAM chip enable, normally high.
6	VDD	Out	LCD drive power, high during standby.
7	GND	In	Power supply (Battery ⊕ terminal)
8	VGG	In	Power supply, normally low
9	X1	Out	System clock oscillation output
10	X2	In	System clock oscillation input
11	X3	Out	Display clock oscillation output
12	X4	In	Display clock oscillation input
13	K1	In	Key input, normally low
14	K2	In	Key input, normally low
15	K3	In	Data in. Serial data input from the PCU (bit-to-bit serial handshake)
16	K4	In	Key input, normally low
17	K5	Out	(SEL2) Select signal output
18	K6	Out	(SEL1) Select signal output
19	K7	In	ACK signal. Enables the I/O (PCU) to read data from the CPU.
20	K8	Out	Busy interface output part
21	RESET	In	Reset input, normally pulled down to low level. Reset when high.
22	CI	In	Option cassette tape recorder interface input
23	CO	Out	Option cassette tape recorder interface signal/buzzer signal output
24	R/W	Out	Write clock, normally high
25	DIO1	In/Out	Data bus, normally low
〃	〃	〃	〃
32	DIO8	In/Out	Data bus, normally low
33	B1	Out	Address bus, low during standby. Also, used for peripheral data output port (Dout).
〃	〃	〃	〃
43	B11	Out	Address bus, low during standby. Also, used for peripheral data output port (Dout).
44	B12	Out	Address bus (PC-1248 only)
45	B13	Out	Address bus (PC-1248 only)
46	S40	Out	LCD segment signal/key strobe, low or high during standby and 4-level pulse during display.
〃	〃	〃	〃
85	S1	Out	LCD segment signal/key strobe, low or high during stnadby and 4-level pulse during display.
86	H16	Out	LCD backplate signal, low or high during standby and 4-level pulse during display.
〃	〃	〃	〃
100	H1	Out	LCD backplate signal, low or high during standby and 4-level pulse during display.

5. CHECK ITEMS AND CAUTIONS

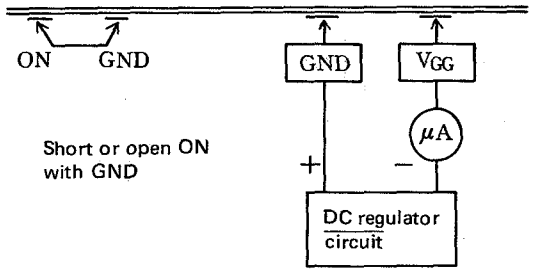
5-1. Off current check

At the time of off with the slide switch at OFF position
7μA at V_{GG} = – 6.0V, maximum (PC-1246S)
8μA at V_{GG} = – 6.0V, maximum (PC-1248)



5-2. On current check

At the time of on with the slide switch at ON position
98μA at V_{GG} = – 6.0V, maximum (PC-1246S)
107μA at V_{GG} = – 6.0V, maximum (PC-1248)



5-3. RAM capacity check

Turn the slide switch ON, push the [MODE] switch to go into the PRO mode. Enter [N] [E] [W] [0] [ENTER] and [M] [•] [ENTER] to have the following figure on the display.
PC-1246S: 1278
PC-1248: 7422

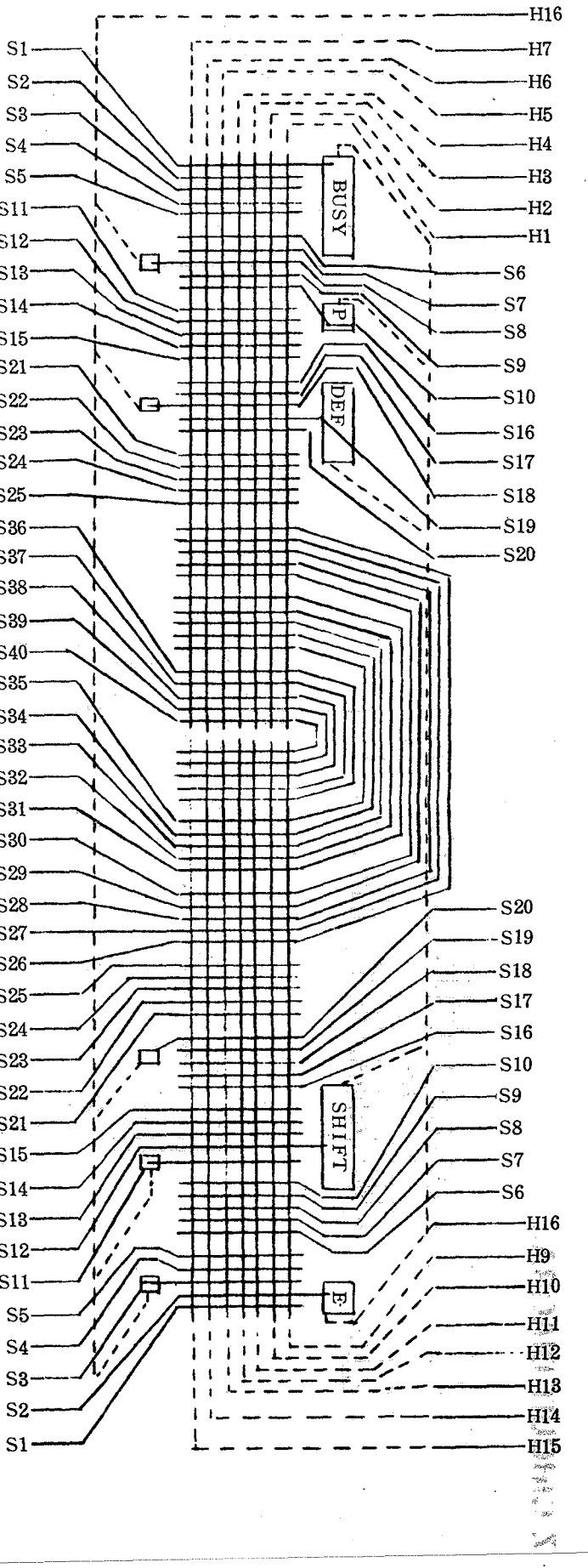
5-4. At a time of battery replacement

After replacement of the battery, turn power on and push the RESET switch.

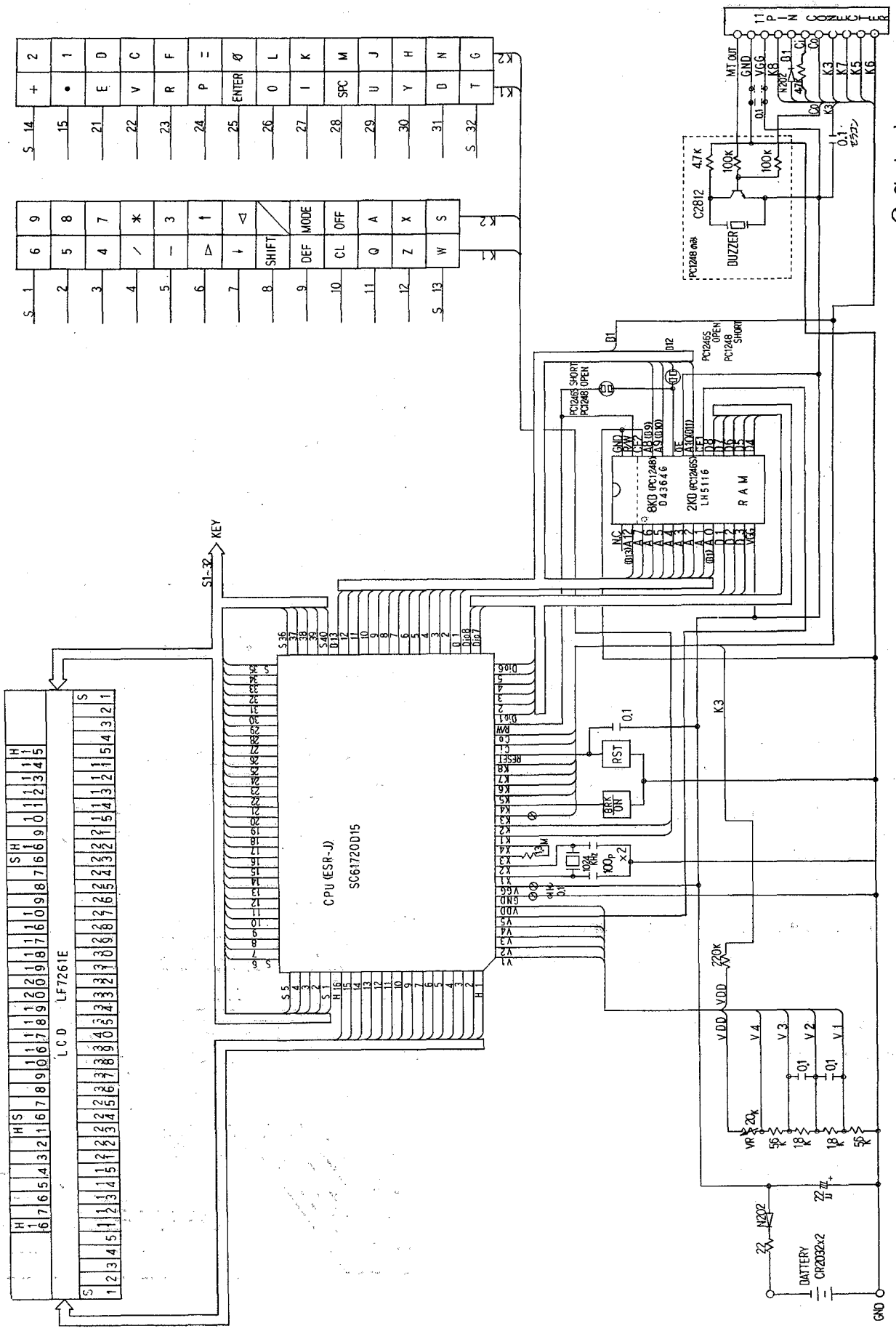
5-5. Auto-power-off check

Display must not go out within 8 minutes but should go out within 14 minutes.

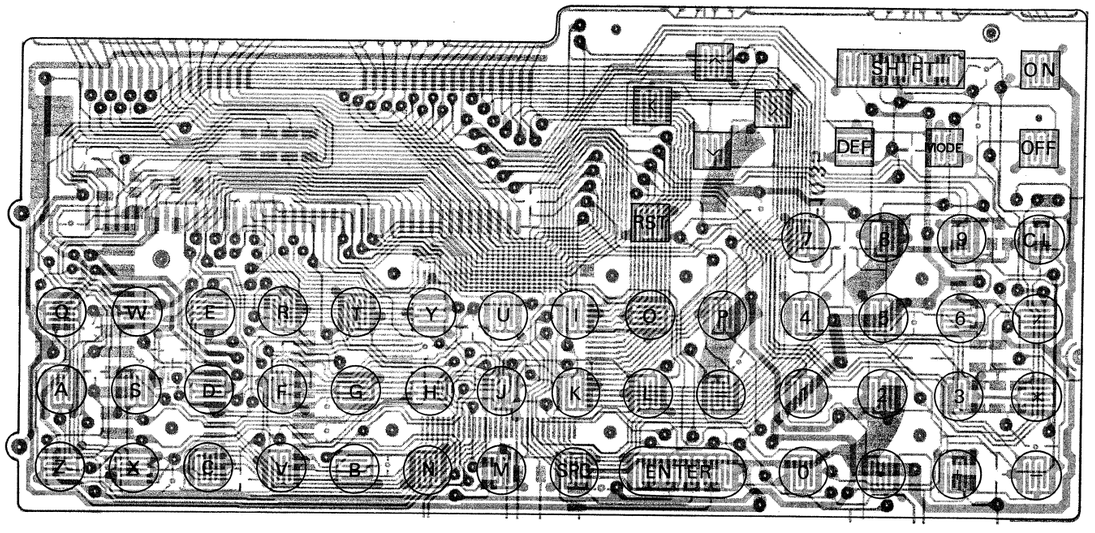
6. LCD (LF7261E) MATRIX

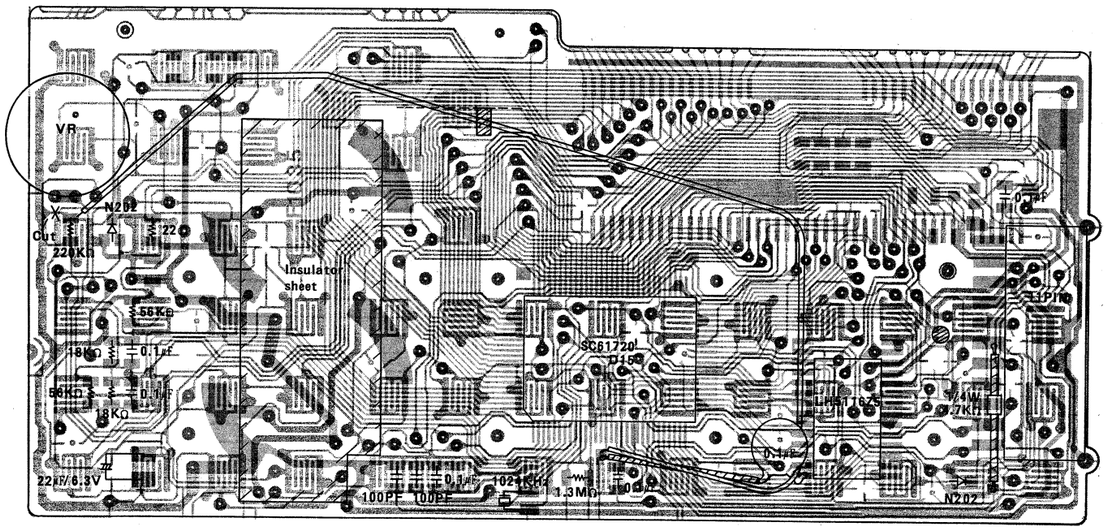


7. CIRCUIT DIAGRAM

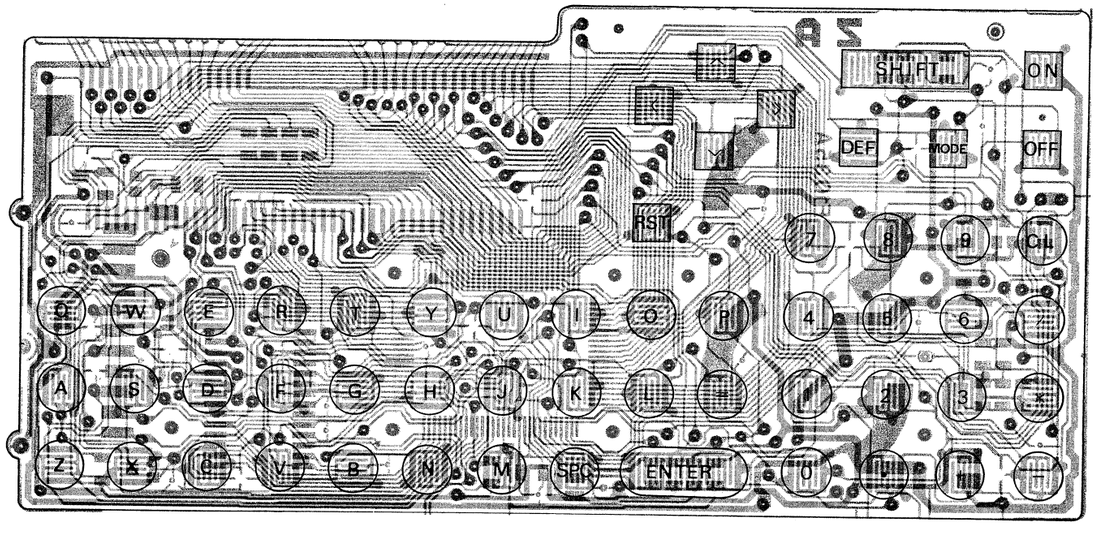


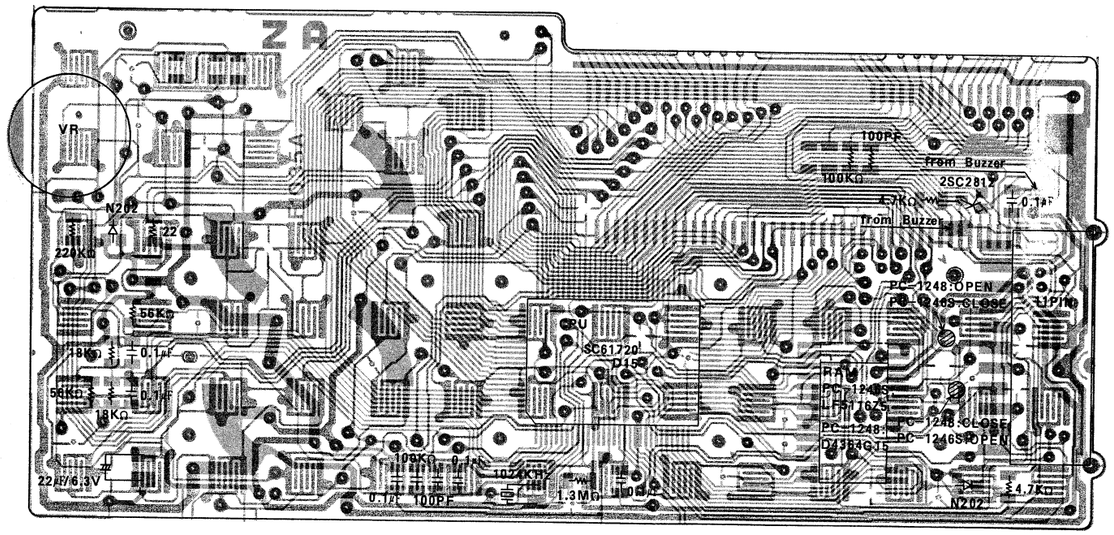
8. PC-1246S (JULY PRODUCT) PARTS & SIGNALS POSITION





9. PC-1246S (AUGUST PRODUCT) AND PC-1248 PARTS & SIGNALS POSITION





10. PARTS LIST & GUIDE

[1] Exteriors

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	PC 1246S	PC 1248
1	GFTAB1008ECZZ	AC	N	D	Battery cover	○	
	GFTAB1008ECSA	AC	N	D	Battery cover		○
2	QTANZ1406CCZZ	AB		C	Battery terminal (⊕⊖)	○	○
3	TLABZ2240CCZZ	AA		C	Battery cover label	○	○
4	PCAPH1004ECZZ	AA	N	C	Rubber cap	○	○
5	LX-BZ1110CCZZ	AA		C	Screw (2×6)	○	○
7	PTPEH1016ECZZ	AC	N	C	Shield tape	○	○
8	PZETL1564CCZZ	AB		C	Insulator sheet	○	○
9	QTANZ1503CCZZ	AB		C	Battery terminal A	○	○
10	GCABA1017ECZZ	AA	N	D	Bottom cabinet (Canada,Germany··July product)	○	
	GCABA1017ECZA	AE	N	D	Bottom cabinet (Other countries)	○	
	GCABA1017ECSA	AE	N	D	Bottom cabinet		○
11	LX-BZ1155CCZZ	AA		C	Screw (2×8)	○	○
12	PGUMS1009ECZZ	AB	N	B	Rubber connector	○	○
13	VVLLF7261E/-1	AL		B	LCD	○	○
14	PSLDP1014ECZZ	AB	N	C	Display mask	○	○
15	PFiLV1006ECZZ	AC	N	C	Polarized filter	○	○
16	CPWBF1035EC01	BK	N	E	Main PWB unit (This includes №101~115,120~123)	○	
	CPWBF1035EC02	BK	N	E	Main PWB unit (This includes №20,21,101~119)		○
17	PZETL1020ECZZ	AA	N	C	Key spacer	○	○
18	DUNT-1131ECZZ	AC	N	E	Key sheet	○	○
19	GCABB1018ECSB	AN	N	D	Top cabinet	○	
	GCABB1018ECSC	AN	N	D	Top cabinet		○
20	RALMB1030CCZZ	AD		B	Buzzer		○
21	PTPEH1213CCZZ	AB		C	Tape		○
22	GCASP1099CCSC	AE		D	Hard case	○	
	GCASP1099CCSD	AE		D	Hard case		○
23	TLABH1092ECZZ	AC		C	Operation label	○	
	TLABH1092ECSA	AC		C	Operation label		○
24	PCAPH1004ECZZ	AA	N	C	Rubber cap (Canada,Germany··July product)	○	
25	LX-BZ1110CCZZ	AA		C	Screw (2×6)(Canada,Germany··July product)	○	
26	LX-BZ1155CCZZ	AA		C	Screw(2×8) (PC-1246S ··· except Canada,Germany)	○	○
101	PSPAP1289CCZZ	AA		C	Spacer for 11pin connector	○	○
102	PZETL1591CCZZ	AA		C	Insulator sheet	○	○
103	QCNCW1001EC1A	AG		C	Connector (11pin)	○	○
104	RC-EZ226BCC0J	AD		C	Capacitor (6.3WV 22μF)	○	○
105	RCRM-1001CCZZ	AF		B	Crystal (1024KHz)	○	○
106	RVR-Z2400QCZZ	AF		B	Variable resistor (20KΩ)	○	○
107	RC-CZ1021CCZZ	AB		C	Capacitor (0.1μF)	○	○
108	RC-CZ1035CCZZ	AC		C	Capacitor (100pF)	○	○
109	VHDDAN202K/-1	AB		B	Diode (DAN202K)	○	○
110	VHiSC61720D15	BB		B	IC (SC61720D15)	○	○
111	VRS-TP2BD135J	AA		C	Resistor (1/8W 1.3MΩ ±5%)	○	○
112	VRS-TP2BD183J	AA		C	Resistor (1/8W 18KΩ ±5%)	○	○
113	VRS-TP2BD220J	AA		C	Resistor (1/8W 22Ω ±5%)	○	○
114	VRS-TP2BD224J	AA		C	Resistor (1/8W 220KΩ ±5%)	○	○
115	VRS-TP2BD563J	AA		C	Resistor (1/8W 56KΩ ±5%)	○	○
116	RH-TX1012CCZZ	AC		B	Transistor (2SC2812)		○
117	VHiD4364G15LN	BD		B	IC (D4364G15LN)		○
118	VRS-TP2BD104J	AA		C	Resistor (1/8W 100KΩ ±5%)		○
119	VRS-TP2BD472J	AA		C	Resistor (1/8W 4.7KΩ ±5%)		○
120	PZETL1243CCZZ	AA		C	Insulator sheet	○	
121	RC-CZ1000QCZZ	AB		C	Capacitor (12WV 0.1μF)	○	
122	VHiLH5116Z5-1	AU		B	IC (LH5116Z5)	○	
123	VRD-HT2EY472J	AA		C	Resistor (1/4W 4.7KΩ ±5%)	○	
201	TiNSE1086ECZZ	AP	N	D	Instruction book (English)	○	○
	TiNSG1087ECZZ	AS	N	D	Instruction book (Germany)	○	○
202	SPAKA8990CCZZ	AE		D	Packing cushion for set	○	○
203	SPAKC0194ECZZ	AG	N	D	Packing case (Canada only)	○	
	SPAKC0196ECZZ	AG	N	D	Packing case (Other countries)	○	
	SPAKC0202ECZZ	AG	N	D	Packing case		○

Parts No.	PC-1248	PC-1246S (SEEG July product)	PC-1246S (Other countries & SEEG August)
10	GCABA1017ECSA	GCABA1017ECZZ	GCABA1017ECZA
24	Not use	PCAPH1004ECZZ	Not use
25	Not use	LX-BZ1110CCZZ	Not use
26	LX-BZ1155CCZZ	Not use	LX-BZ1155CCZZ